

# NOKIA

## N610 N616 N810

TFE-4/RV-1/TFE-4R



### Transceiver characteristics:

- Car phone for GSM 900/1800 networks
- RS232 connector (810 only)
- Separate display with big fonts
- Handset with function keys and a Navi™ wheel
- Voice dialing and voice commands
- Voice recording and replay of voice memos
- Wireless downloading of contact information from a compatible phone using Bluetooth technology
- Support for two user profiles, including contacts, voice tags, and personal settings
- Excellent handsfree audio quality
- External antenna interface

### Environmental characteristics:

- Lead soldered

## SERVICE MANUAL

### Service Level 1&2&3

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## CHANGE HISTORY

| Status   | Version No. | Date       | Comments      |
|----------|-------------|------------|---------------|
| Draft    | 0.1         | 23.04.2003 | Initial draft |
| Approved | 1.0         | 05.08.2003 | approval      |
| Approved | 2.0         | 07.01.2004 | approval      |
| Approved | 3.0         | 28.02.2005 | approval      |
|          |             |            |               |

## 1. INTRODUCTION

The purpose of this document is to help NOKIA service levels 1 and 2 workshop technicians to carry out service to NOKIA products. This Service Manual is to be used **only** by authorized NOKIA service suppliers, and the content of it is **confidential**. Please note that NOKIA provides also other guidance documents (e.g. Service Bulletins) for service suppliers, follow these regularly and comply with the given instructions.

While every endeavor has been made to ensure the accuracy of this document, some errors may exist. If you find any errors or if you have further suggestions, please notify NOKIA using the address below:

<mailto:cc-ts-rc.documentation@nokia.com>

Please keep in mind also that this documentation is continuously being updated and modified, so watch always out for the newest version.

### Warnings and Cautions

Please refer to the phone's user guide for instructions relating to operation, care and maintenance including important safety information. Note also the following:

#### Warnings:

1. CARE MUST BE TAKEN ON INSTALLATION IN VEHICLES FITTED WITH ELECTRONIC ENGINE MANAGEMENT SYSTEMS AND ANTI-SKID BRAKING SYSTEMS. UNDER CERTAIN FAULT CONDITIONS, EMITTED RF ENERGY CAN AFFECT THEIR OPERATION. IF NECESSARY, CONSULT THE VEHICLE DEALER/MANUFACTURER TO DETERMINE THE IMMUNITY OF VEHICLE ELECTRONIC SYSTEMS TO RF ENERGY.
2. THE HANDPORTABLE TELEPHONE MUST NOT BE OPERATED IN AREAS LIKELY TO CONTAIN POTENTIALLY EXPLOSIVE ATMOSPHERES EG PETROL STATIONS (SERVICE STATIONS), BLASTING AREAS ETC.
3. OPERATION OF ANY RADIO TRANSMITTING EQUIPMENT, INCLUDING CELLULAR TELEPHONES, MAY INTERFERE WITH THE FUNCTIONALITY OF INADEQUATELY PROTECTED MEDICAL DEVICES. CONSULT A PHYSICIAN OR THE MANUFACTURER OF THE MEDICAL DEVICE IF YOU HAVE ANY QUESTIONS. OTHER ELECTRONIC EQUIPMENT MAY ALSO BE SUBJECT TO INTERFERENCE.

#### Cautions:

1. Servicing and alignment must be undertaken by qualified personnel only.
2. Ensure all work is carried out at an anti-static workstation and that an anti-static wrist strap is worn.
3. Use only approved components as specified in the parts list.
4. Ensure all components, modules screws and insulators are correctly re-fitted after servicing and alignment.
5. Ensure all cables and wires are repositioned correctly.



Electrostatic discharge can easily damage the sensitive components of electronic products. Therefore every Service Supplier has to take care of all precautions, which are mentioned in the service level related "Service Partner Requirements", available on NOKIA Online. Also see ESD Protection Requirements in this Service Manual.

## 2. GENERAL REPAIR INFORMATION

In this section the technician will get some general hints how to carry out repairs:

- To familiarize oneself with NOKIA product read the tutorials or user guide on [www.NOKIA.com](http://www.NOKIA.com) -->Support--> Phones, by selecting the Phone Model.
  - Before starting the repair you must take care of ESD precautions like being in your ESD Protected Area and connecting your wristband.
  - Use gloves to avoid corrosion and fingerprints.
  - Protect windows and displays with a film to avoid dust and scratches.
  - When cleaning the LCD Module any lint-free cloth can be used (e.g. Micro-Fibre cloth).
  - When cleaning the pads you have to use a soft cloth/ESD brush and Isopropanol. It is not allowed to use a glass fiber pencil because it scratches the surface and will lead later on to corrosion.
  - Mechanical parts (except shielding lids and bent parts), which didn't repair the failure, can be reused, if they are not soldered.
  - When removing the shielding lids make sure to replace them with new ones, otherwise the high-frequency leakage can have an influence on the device.
  - Always use original NOKIA spare parts.
  - Check the soldering joints of the parts, which are concerned regarding the indicated error (e.g. soldered connectors or switches) and resolder them if necessary (Level 2 only).
  - Remove redundant soldering flux after repair.
  - Meet the torque requirements when assembling the unit (see also the document "torques for transceiver assembly" on NOKIA Online).
  - Always use your own equipment for testing where you are sure that it works. E.g. if the customer complains about charger function, please test the phone with your own charger to be sure if phone or charger causes the malfunction.
  - A SIM card is needed for all GoNoGo tests.
  - When doing the fault log entries, always note the Item code, which caused the malfunction. Also, fill in the appropriate part code from the assembly, if needed.
  - Please be aware that some malfunctions could be software related and solved by an update.
- 
- There are several documents available on NOL, which have to be followed:
  - First, take care for the latest content pages of Service Bulletins, which are always available for each folder on NOKIA Online. This is also important to recognize, if existing documents have become invalid.
  - The service level indicator at the bottom of each document tells the appropriate destination.

### Downloads > Support Library >

1. Instructions
  2. General Service Bulletins
  3. Product related documents
  4. Spare Part Service Bulletins
  5. Service Tools Service Bulletins
  6. Common Software Service Bulletins
- etc,...

Use General SB-217 as a reference or overview.

Please also check NOKIA Online (NOL) for latest news and files on a regular basis.

## 3. PATHFINDER FOR WORKSHOP STAFF

In addition to the information in this Service Manual, there are several instructions and information, which have to be followed. Main documentation database is [NOKIA Online](#) with the purpose of serving different multimedia content, like video clips or interactive tutorials.

It is mandatory to watch for newest technical and organizational information on a daily basis to be updated as required (see “**Latest files in Support Library**”). Every new information has to be processed and implemented as soon as possible.

When logged into NOL you can also find needed information in different folder like:

### Support Library



### Phones



Service Manuals  
Service Bulletins  
Software  
Repair Information

## Level 1&2 e-learning (former NOKIA CarePoint) on NOKIA Online

|   |   |                              |
|---|---|------------------------------|
| Former NOKIA CarePoint content, such as   | <ul style="list-style-type: none"> <li>• Online Troubleshooting</li> <li>• Product informations</li> <li>• Videos – Disassembly/Assembly</li> </ul> | can be found on NOKIA Online |
|   |   |                              |
| <p><a href="#">NOKIA Online</a></p> <p>↓</p> <p>Care Services</p> <p>↓</p> <p>Training</p> <p>↓</p> <p>Phone Models</p> |   |                              |

Level 1&2 e-learning courses offer a quick overview of the NOKIA phone and support for how to repair and use the phone:

| Overview & Guides  | Disassembly & Assembly                             | Troubleshooting   |
|--|--|---|
| Basic information about the phone, features and technologies | Instructions to disassemble and assemble the phone | Step-by-step instructions on how to locate and repair the most common problems with the phone |

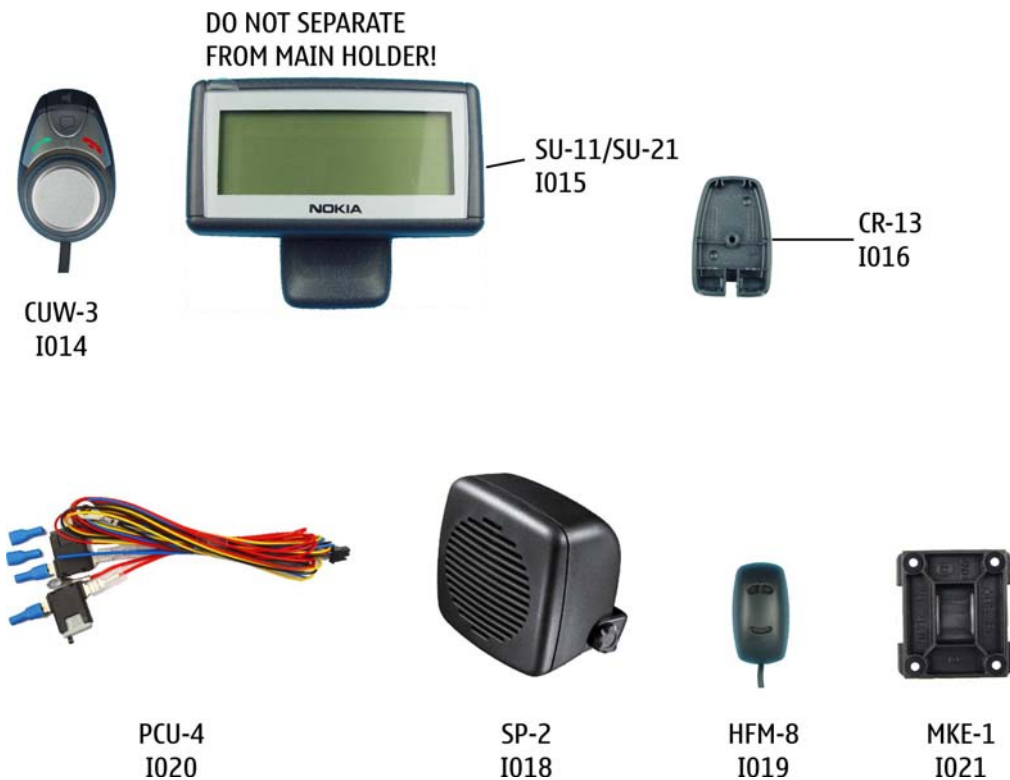
To reduce the server traffic it is recommended to download newest version of huge files like videos, Phoenix packages or Service Manuals only once and distribute it internally for further use.

## 4. EXPLODED VIEW AND COMPONENT DISPOSAL



● Electro ● Silicone ● Metal ● Plastic ● PWB ● Cover

## 5. PERIPHERAL SPARE PARTS N610 TFE-4/N616 RV-1



## 6. PERIPHERAL SPARE PARTS NOKIA 810 TFE-4R






## 7. SPARE PARTS LIST

Please exchange this page (placeholder) with latest corresponding Service Bulletins (spare parts, SWAP units and service tools) from NOL!

This will ensure, that you are using up-to-date order codes only.

Therefore Service Bulletins have to be checked from NOL on daily basis.

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Support Library

Warranty Info

Service Points

Training

Search

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### Support Library

Latest files

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#### Browse files

Select category:

Select subcategory:

Select subcategory:

Date range from  /  /

until:  /  /

Search

| Files for Service level 2 | Date: 03.02.2005 |
|---------------------------|------------------|
| ■ XXXXXXXXXXXXXXXXXXXX    |                  |

| Files for Service level 3 | Date: 16.02.2005 |
|---------------------------|------------------|
| ■ XXXXXXXXXXXXXXXXXXXX    |                  |

| Files for Service level 1 | Date: 16.02.2005 |
|---------------------------|------------------|
| ■ XXXXXXXXXXXXXXXXXXXX    |                  |
| ■ XXXXXXXXXXXXXXXXXXXX    |                  |
| ■ XXXXXXXXXXXXXXXXXXXX    |                  |

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## 8. SERVICE TOOLS

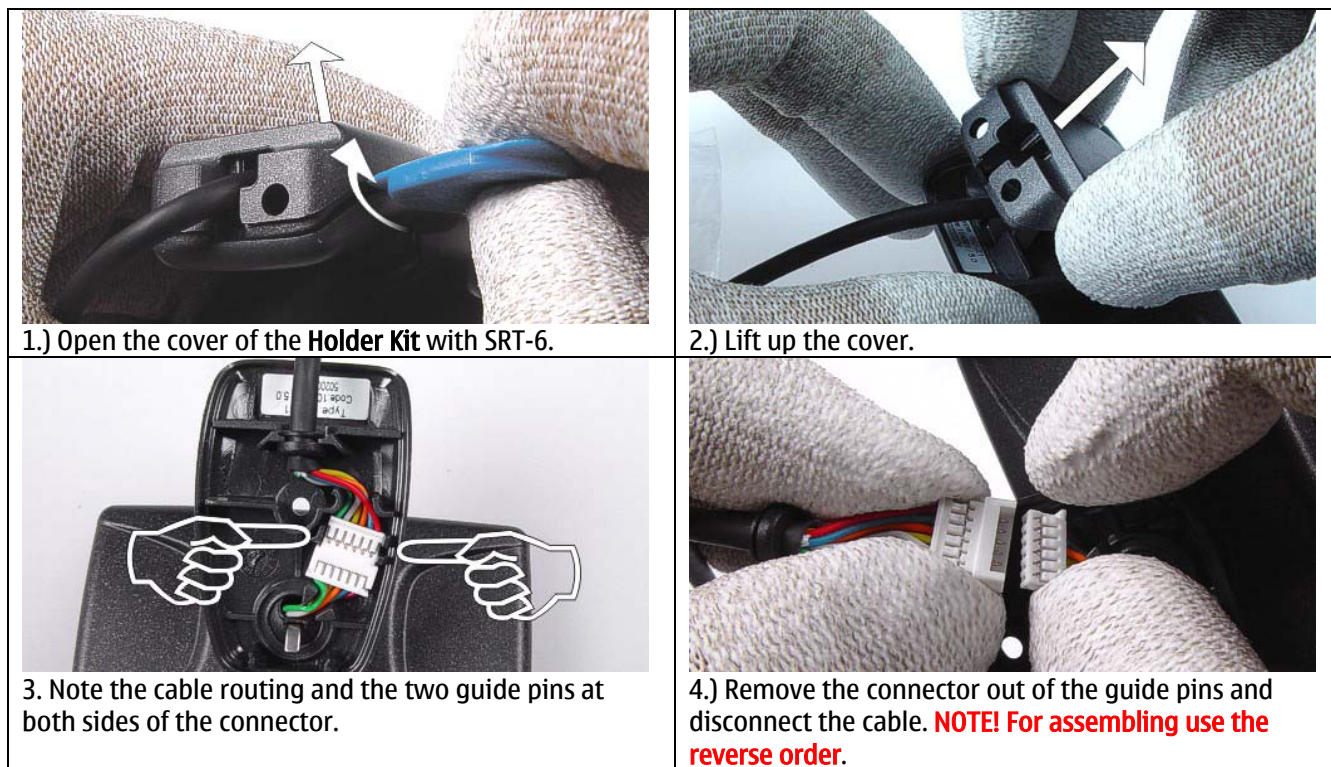
|   |  |
|---|--|
|   | <p><b>FLS-4S incl. ACF-8, Driver and User Guide</b><br/>Dongle and flash device incorporated into one package, developed specifically for POS use.</p> |
|  | <p><b>Power Adapter AD-2</b><br/>Used for TFE-4R</p>   |
|  | <p><b>Power Supply ACW-4</b><br/>Power Supply for AD-2.<br/>Output: 13,5VDC / 3,5A</p>   |
|  | <p><b>PCW-3E</b><br/>AC Cable Euro is used for ACW-4</p>   |
|  | <p><b>Flash Cable CS-15</b><br/>Service Cable is used to connect FLS-4S to TFE-4R.</p>   |

## 0772040 NMP Standard Toolkit

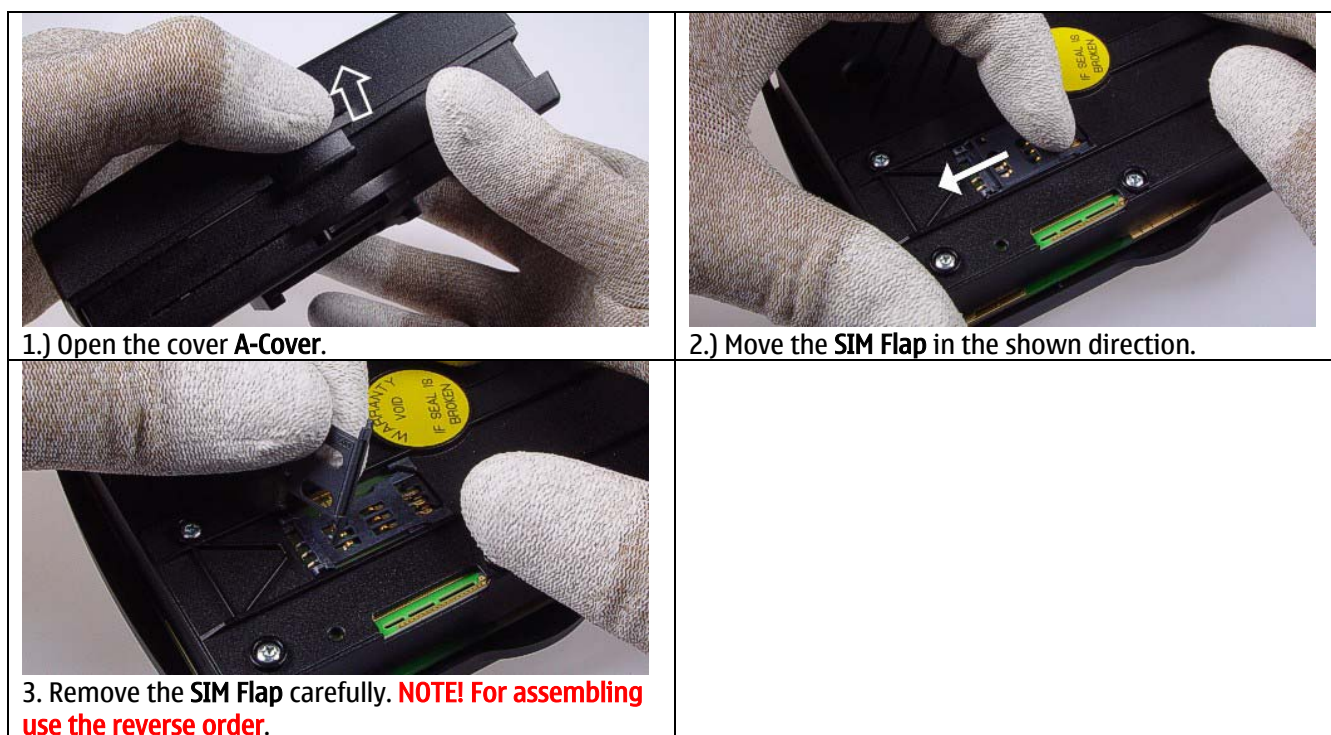


- NOKIA opening tool SRT-6 NOKIA No. 0770431
- Tonichi torque driver NOKIA No. 6901525
- [Hoya](#) micro fibre cloth MX304
- [Dastex](#) gloves S, M, XL
- [Artlux](#) goggles AH166
- [Wera](#) bit T5 867/4TX 5x50
- Wera 867/4 6IP; 50mm (Torx 6 PLUS®)
- Wera bit T6 867/4TX 6x50
- Wera 867/1 5IP; 25mm (Torx 5 PLUS®)
- Wera bit T6 PLUS® 867/4TX 6IP
- [Facom](#) side cutter 416E
- Facom T5 driver SP.14032
- Facom T6 driver SP.14033
- Facom slot screwdriver AEF. 2x35.E
- [Wetec](#) tweezers 7abb SA-ESD
- Wetec tweezers 22 SA-ESD
- Wetec tweezers 13 SA-SMD ESD
- Wetec tweezers PSF SA-ESD
- Wetec ESD brush E1211
- [Kaiser](#) Fototechnik airbrush 6315
- Wetec dental tool DEM83266/0
- [RS](#) Components Scissors 323-5732

## 9. DISASSEMBLY INSTRUCTION SU-11/SU-21



## 10. DISASSEMBLY INSTRUCTION SIM FLAP

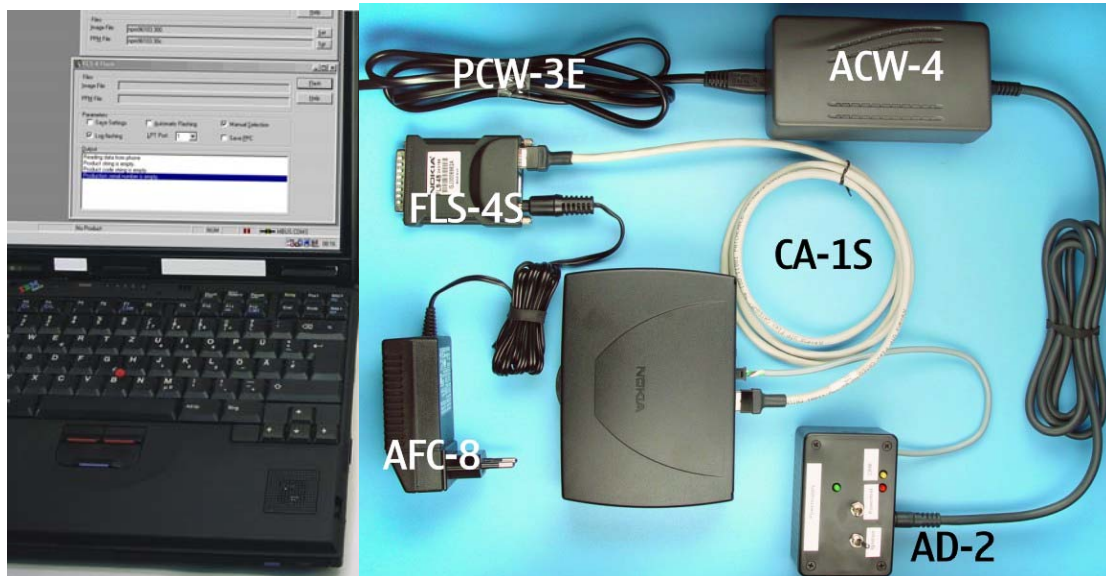




## 11.SW-UPDATE

To use FLS-4S Flash Dongle you have to follow the user guide inside the sales package. Please check always for the latest version of flash software, which is available on [NOKIA Online](#).

### Flash Concept – (Point of Sales)



## 12. BLUETOOTH TEST

### N810

You need another Bluetooth device (e.g. 6310i) to do a GoNoGo test.

Make sure that Bluetooth is activated in the reference unit. The distance of the devices should be not more than 5m from each other.



Test unit



Reference unit, Bluetooth

Settings on the test unit:

- From Home Menu, push the Navi™ wheel down.
- Select **Bluetooth** menu by rotating the Navi™ wheel and pushing them down.
- Select **Search for Bluetooth devices**  
Search window appears, if all Bluetooth devices in range will be displayed, the test is successful!  
Press red receiver button for Home Menu

### N610/616

This device detects Bluetooth audio enhancement only. Make sure that Bluetooth is activated in the reference unit. The distance of the devices should be not more than 5m from each other.



Test unit



Reference unit, Bluetooth

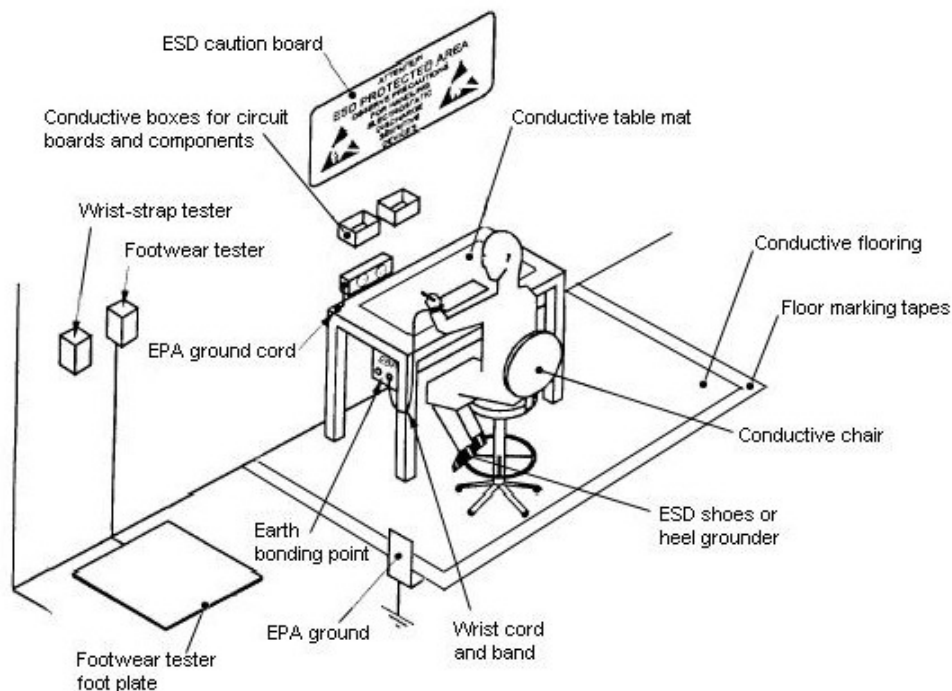
Settings on the test unit:

- From Home Menu, push the Navi™ wheel down.
- Select **Bluetooth** menu by rotating the Navi™ wheel and pushing them down.
- Select **Search for audio enhancement**  
Search window appears, if all audio Bluetooth devices in range will be displayed, the test is successful!

Press red receiver button for Home Menu

## 13. ESD PROTECTION REQUIREMENTS

Please refer to the NOKIA Online document [Service Supplier Requirements](#) in folder General instructions.



- USE** Conductive bags and boxes
- USE** ESD compatible service tools
- USE** Conductive wastebaskets
- USE** ESD gloves when handling PWBs/PCBs
- USE** Cleaning material without changing el. Characteristics
- USE** Grounded service equipment, i.e. soldering station
- USE** ESD clothes such as coat or frock

- NO** Smoking
- NO** Drinking
- NO** Eating
- NO** Dust
- NO** Useless Items
- NO** Normal pressured air for cleaning modules/displays



The video covers general issues concerning Electro-Static Discharge (ESD)